10-1-1999

Wright State University College of Engineering and Computer Science Bits and PCs newsletter, Volume 15, Number 8, October 1999

Wright State University College of Engineering and Computer Science

WRIGHT STATE UNIVERSITY

BITs & PCs

COLLEGE OF ENGINEERING AND COMPUTER SCIENCE

October 1999 Wright State University Dayton, Ohio 45435 Vol. 15 No. 8

New Major in Industrial and Systems Engineering (ISE) at WSU

In June 1999, Wright State became the first university in the Dayton area to offer an undergraduate degree in Industrial and Systems Engineering. Industrial Engineering is already the fifth largest engineering major in the United States, and enrollments continue to increase nationally. With the large industrial base in the Dayton area, Industrial Engineering at Wright State is a natural fit.

ISE at WSU

Industrial engineers (IEs) determine the best way to do things from assembling cars to searching the Internet. They engineer processes and systems that improve quality and productivity. Industrial engineers make significant contributions by saving their employers money while, at the same time, making the workplace a better, healthier place to be. The most distinctive aspect of industrial engineering is the flexibility that it offers. It provides an opportunity to work in a variety of businesses, solving a wide range of problems. Manufacturing firms and service industries hire a significant number of IEs, while modern businesses need IEs in areas like sales and marketing, finance, information systems, and personnel. Corporations as diverse as Coca Cola, UPS, Disney, IBM, Levi Strauss, Nike, The Gap, Intel, Microsoft, Motorola, and Boeing all use industrial engineers to accomplish a variety of creative tasks.

continued on Page 3

Biomedical Imaging Laboratory Involved In International Research Study

The Biomedical Imaging Laboratory of Wright State University and Miami Valley Hospital, under the directorship of Thomas N. Hangartner, Ph.D., Department of Biomedical, Industrial, and Human Factors Engineering, has been selected to provide training for a special radiologic procedure. This training procedure is sponsored by Proctor & Gamble Pharmaceuticals of Cincinnati in conjunction with a large multi-center study.

In September and October, radiologic technologists from all over the U.S. and Canada will come to Dayton to attend a week-long training session. The technologists will be trained on a procedure which consists of a special radiograph of the knee that needs to be taken after the knee has been positioned with the help of a fluoroscopic device. This elaborate positioning procedure allows

continued on Page 3

What's Inside?

WSU's Engineering 199 Students Are Building Better Bridges

On Friday, September 17, freshman engineering and computer science students competed in a model bridge building competition as part of EGR 199—Introduction to the Art of Engineering. This course provides hands-on projects; real, virtual, and remote laboratory experiments; computer simulations; and the opportunity to practice the art of engineering design.

Teams consisting of four students began designing and building their bridges before classes began. Each team received a box containing the same type and number of colorful K'NEX plastic parts which are available at local toy stores. Each team followed the same rules for building the bridges which had to have a span of at least 40 inches.

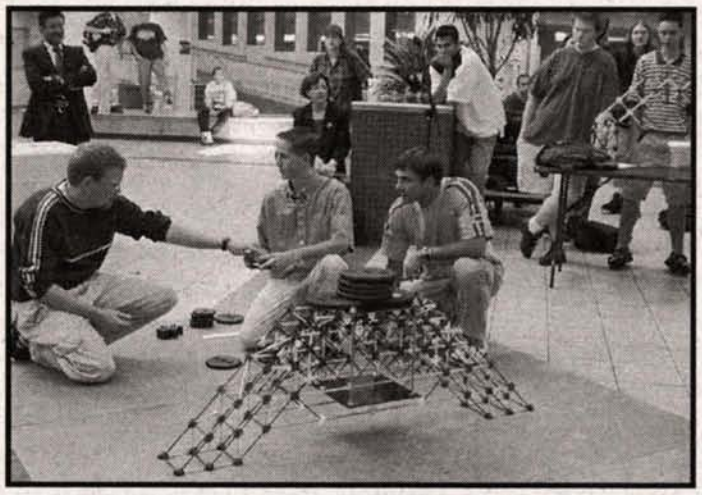
During the competition, bridges which met the established criteria were subjected to an increasing load until it collapsed. This maximum load divided by the weight of the bridge determined the "strength to weight" ratio of each bridge. The bridge with the largest ratio was the winner of the competition.

This is the second year for EGR 199 and the Bridge Busting Competition. Apparently, the students did their homework because, on average, the bridges were much more durable this year.

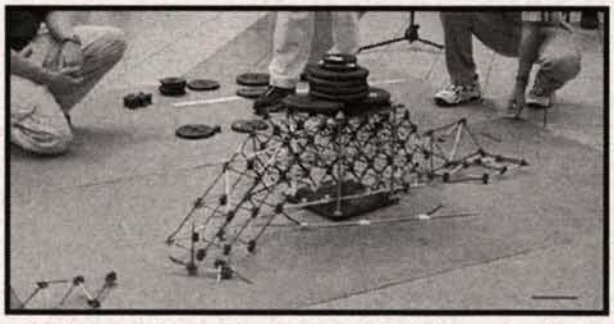
Good work, students!

A couple of new and popular features at this year's competition were the use of student emcees and team fight songs.

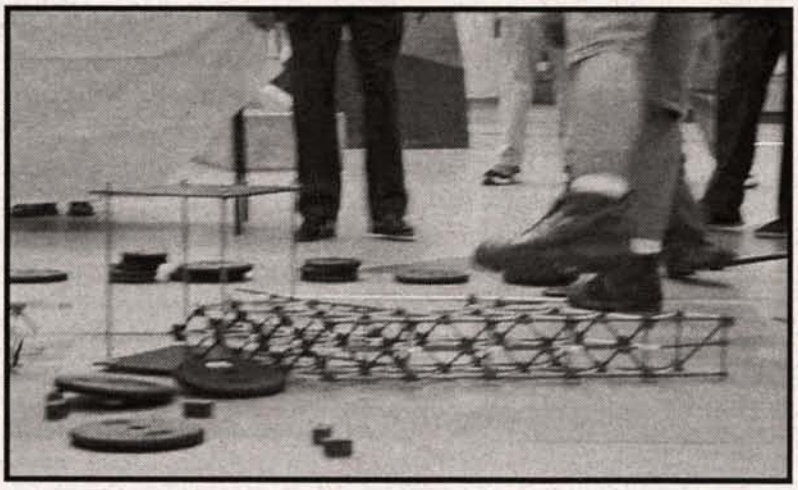
Two of last year's EGR 199 students offer advice and assistance to a competitor whose teammates were studiously attending class and missed the competiton.



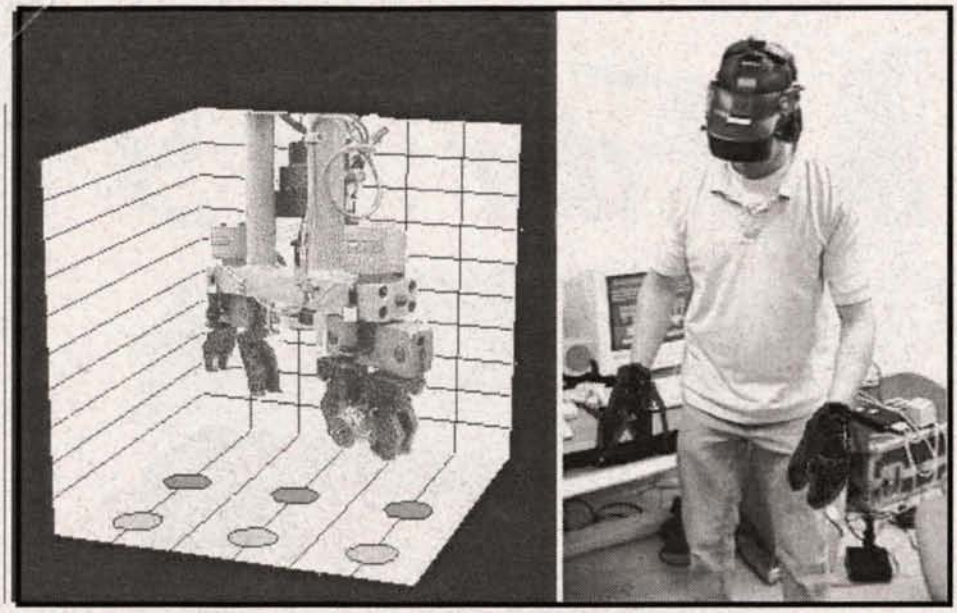
The crowd watches as group members confer on how much weight to add next.



Collapse of the creation is the goal of the competition.



When that bridge finally goes...you'd better watch your toes!



A growing sector in ISE includes research into virtual reality control of industrial robots.

The same is true for other industries, such as hospitals, airlines, banks, railroads, and social services.

The Industrial Engineering degree at WSU is about choices. Based on input from students, alumni, and employers, the ISE curriculum was developed to provide the student with the depth and breadth necessary for the workplace of tomorrow. Students obtain core knowledge in all aspects of Industrial Engineering and then have the opportunity to develop a focus area through their five elective courses. Current focus area tracks include human integrated systems, computer and information systems, operations management, and undergraduate honors thesis. Students completing the computer and information systems track can apply for the minor in Computer Science for Scientists and Engineers. Those completing the operations management track are eligible for the Operations Management minor offered through the College of Business and Administration. In the recently updated Jobs Rated Almanac, Industrial Engineering ranked the highest as the most desirable profession of all major engineering areas.

For further information about opportunities in the new Industrial and Systems Engineering degree program at Wright State University, please contact Dr. Rick Koubek, Chair, Department of Biomedical, Industrial, and Human Factors Engineering by e-mail at rkoubek@cs.wright.edu, or stop by 207 Russ Engineering Center.

Biomedical Imaging Laboratory Continued

reproducible evaluation of the joint space of the knee with the help of special image processing software. The procedure will be applied to hundreds of patients throughout the country participating in a research study to evaluate a new treatment for osteoarthritis.

In order to minimize errors generated by x-ray equipment, the equipment to be used by the various technologists at their home institutions needs to be evaluated and certified. In order to evaluate the equipment, Dr. Hangartner developed a special phantom that is measured by each of the potential instruments. This phantom is able to measure geometric distortion, geometric resolution, range of exposure, and sensitivity to small objects of small density difference. The phantom was built to exacting specifications in order to provide the expected assessments. The master craftsmen of the WSU Instrument Shop, John Lawless and Wayne Massey, built three copies of the phantom. One phantom has traveled to all the prospective research sites in the U.S., the second has traveled to all the prospective research sites in Europe. All radiographic images taken with the phantoms are being sent back to Dayton for analysis and certification of the radiographic equipment.

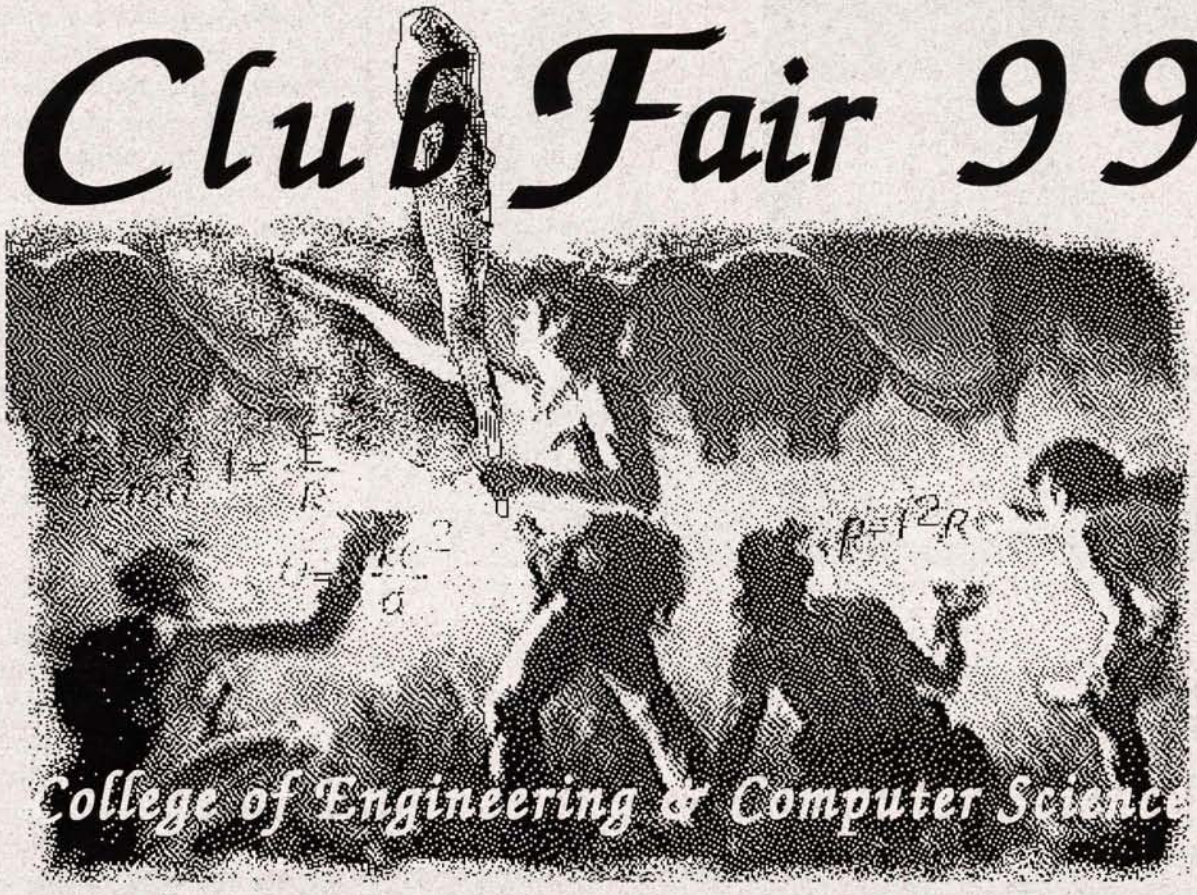
Anyone interested in learning more about this research or the radiologic training should contact Dr. Thomas N. Hangartner; Department of Biomedical, Industrial, and Systems Engineering; 775-5044 (at WSU) or 208-2257 (at Miami Valley Hospital).

BITs & PCs is a monthly newsletter published by the College of Engineering and Computer Science to inform students about activities, news, opportunities and changes occurring in the College. It reports on the achievements of faculty and students; changes in organization, policy and curriculum; scholarship and employment opportunities; and engineering and computer science student club activities.

The current issue of *BITs & PCs* is available on the World Wide Web at **http://www.cs.wright.edu/bitsandpcs/default.html.** Copies are also available in the College office, any Department office, literature racks in the Russ Center Atrium, Russ Center Study Lounge, or the Student Club Room.

The next issue of *BITs & PCs* will be published the week of November 1, 1999. To submit items for this issue, call the College of Engineering and Computer Science at **(937) 775-5001**, or send E-Mail to **kthis@cs.wright.edu** by October 18, 1999.

Club Fair 99



Wright State University

You're invited to meet with representatives from our clubs

✔*Find Out What's Happening*
✔ *Check out the displays*
✔ *Enjoy refreshments*
✔ *Join a club and become eligible for a door prize*
(drawing after the fair - you need not be present to win)

Wednesday, October 20, 1999
11 A.M. - 1 P.M.
Russ Engineering Center Lobby

American Institute for Aeronautics and Astronautics (AIAA)
American Society of Mechanical Engineers (ASME)
ASM International—The Materials Information Society (ASM/TMS)
Association for Computing Machinery (ACM)
Biomedical Engineering Society (BMES)
Human Factors Society (HFS)
Institute of Electrical and Electronics Engineers (IEEE)
Institute of Electrical and Electronics EngineersComputer Society (IEEECS)
National Society of Black Engineers (NSBE)
Ohio Society of Professional Engineers (OSPE)
Society of Automotive Engineers (SAE)
Society of Women Engineers (SWE)
Tau Beta Pi (Engineering Honor Society)
Wright Engineering Council (WEC)

Faculty/Graduate Student Seminar Series

If you missed the first seminar for Fall Quarter, "Efficient Mining of Emerging Patterns: Discovering Trends and Differences," by Dr. Guozhu Dong, CSE, you can catch the next one, "Mining Association Rules in Text Databases," by CSE Ph.D. candidate John Holt of Lexis Nexis. The seminar will be held on October 8, 1999 in 145 Russ from 11:00 to noon. On October 22, 1999, Dr. Francis Quek, CSE, will present "A Comprehensive Approach to Human Communication using Gesture, Speech, and Gaze." On November 5, 1999, CSE Ph.D. candidate Yadong Li will speak on "Tracking Human Faces in Videos." All the seminars will be held in 145 Russ from 11:00 a.m. until Noon.

Workshop Held

ITRI sponsored a one-day workshop September 9, 1999, on Knowledge Discovery and Data Mining. Opening speaker Ken O'Flaherty from NCR San Diego provided a survey on the field of knowledge discovery and data mining. Next, Computer Science faculty members Drs. Soon Chung, Guozhu Dong, Philip Chen, Ricardo Gutierrez-Osuna, and Ardeshir Goshtasby followed with presentations on special topics in knowledge discovery and data mining.

In the afternoon session, Mr. John Holt of Lexis-Nexis, Dr. Soon Chung, Mr. Ron O'Rear from SAIC, Mr. Ron Crompton of Intelligent Algorithms and Dr. Bruce Berra, ITRI Director, presented on applications of knowledge discovery and data mining. The closing session was a panel composed of Drs. Dong, P. Chen, and Goshtasby presenting the academic view and Mr. O' Flaherty, Mr. Crompton and Mr. Jim Lance from Elder- Beerman representing the industrial view. The five most important problems in knowledge discovery and data mining were explored. Over 60 people from local and state Universities, industry, government, and military attended.

Ty D. Upp says. . . . . .

The hallways of the Russ Center in classroom, study lounge, and vending machine areas were painted just before the start of Fall Quarter. Please help keep these areas clean by adhering to the following requests.

- ⊘ **Do not** put your hands or feet on the walls.
- ⊘ **Do not** post items on walls, doors, or door frames.
- ☑ **Do** see Teri Shepherd, Dean's Office, Room 405, to post announcements in the lobby.
- ☑ **Do** get a holder for your lab or office door if you expect to have numerous announcements or schedules to display. (To see the type of holder we prefer be used, check the Periodical Reading Room door, Room 404.)
- ☑ **Do** post anouncements for clubs and student organizations in the glass cases outside the Club Room.

Fritz and Dolores Russ Engineering Center

Bits & PCs
College of Engineering and Computer Science
Wright State University

Dean
James E. Brandeberry, Ph.D., P.E.

Editor and Staff Writer
Karil S. This

Submit questions, articles and ideas to Editor, 405 Russ Engineering Center. The College of Engineering and Computer Science reserves the right to edit all material for publication.

FACULTY FACTS

Michael T. Cox, Ph.D., CSE, has received funding in the amount of $70,074 from the University of Connecticut for his proposal entitled "Large-Scale, Multi-Agent, Distributed Mission Plannign and Execution in Complex Dynamic Environment." ❖

Michael T. Cox, Ph.D., CSE, and Sundaram Narayanan, Ph.D., BIE, have received funding in the amount of $304,095 from the Dayton Area Graduate Studies Institute for their proposal entitled "Collaborative Information Systems and Adaptive Work Processes." ❖

Jennie J. Gallimore, Ph.D., BIE, has received funding in the amount of $25,000 from the Department of Defense, Naval Aerormedical Research, for her proposal entitled "Visual Displays Research." ❖

Oscar Garcia, Ph.D., CSE, has received funding in the amount of $49,985 on behalf of the Department of Computer Science and Engineering from the Ohio Supercomputer Center to conduct the Summer Institute for Advanced Computation. The staff of the CSE Department presented the Institute August 22-28 at Wright State University to 32 attendees from universities and industries in Ohio. Topics included parallel architectures and paradigms, parallel programming (MPI) and graphic visualization. ❖

Oscar Garcia, Ph.D., CSE, and P. Bruce Berra, Ph.D., ITRI, have also received funding in the amount of $125,000 on behalf of the Department of Computer Science and Engineering from the Ohio Board of Regents for the Priorities in Graduate Education program. ❖

Ramana Grandhi, Ph.D., ME, and J. Mitch Wolff, Ph.D., ME, have received funding in the amount of $212,466 from the Dayton Area Graduate Studies Institute for their proposal entitled "Computational Nonlinear Aeroelasticity Multi-disciplinary Analysis and Design." Drs. Wolff and Grandhi have also received funding in the amount of $50,000 from the Department of Defense, Air Force Research, for their proposal entitled "Precision Design, Modeling, and Instrumentation in Turbomachinery." ❖

Marian Kazimierczuk, Ph.D., EE, (with J. A. Weimer, B. T. Nguyen, and B. A. Jordan) has received U.S. Patent No. 5,914,542 entitled "Supercapacitor charging." ❖

Prabhaker Mateti, Ph.D., CSE, has received funding in the amount of $69,144 from the National Science Foundation, Course, Curriculum, and Laboratory Improvement, for his proposal entitled "Laboratory-Based Courses on Firewalls and Internet Security." ❖

Sharmila Mukhopadhyay, Ph.D., ME, has received funding in the amount of $20,028 from Superconductive Components, Inc., for her proposal entitled "Investigate the Feasibility of Fabricating Large Scale Dual Microstructure YBCO Toroid." Dr. Mukhopadhyay has also received funding in the amount of $25,498 from Universal Technology Corporation for her proposal entitled "Characterization of Carbon Materials." ❖

Sundaram Narayanan, Ph.D., BIE, and Richard J. Koubek, Ph.D., BIE, have received funding in the amount of $221,180 from the Dayton Area Graduate Studies Institute for their proposal entitled "Models, Web-Based Simulations and Integrated Analysis Techniques for Improved Logistical Performance." ❖

Chandler A. Phillips, M.D., BIE; David B. Reynolds, Ph.D., BIE; and Richard J. Koubek, Ph.D., BIE, have received funding in the amount of $83,703 from the National Science Foundation, Grants for Scientific Research, for their proposal entitled "Biomedical and Human Factors Engineering Design Projects for Persons with Disabilities." ❖

Blair Rowley, Ph.D., BIE, has received funding in the amount of $270,612 from the Ohio Rehabilitation Services Commission for his proposal entitled "Rehabilitation Technology Contract." Dr. Rowley has also received additional funding in the amount of $100,000 from the U.S. Department of Education for his proposal entitled "Rehabilitation Engineering and Technology Training." ❖

J. Mitch Wolff, Ph.D., ME, has received funding in the amount of $145,539 from the Dayton Area Graduate Studies Institute for his proposal entitled "High Cycle Fatigue Unsteady Aerodynamic Analysis Improvements and Flow Physics." ❖

New Faculty Member Joins Department of Biomedical, Industrial, and Human Factors Engineering

Craig M. Harvey joins the Department of Biomedical, Industrial, and Human Factors Engineering as an Assistant Professor. He earned his Ph.D. in Industrial Engineering from Purdue University in 1997 with a dissertation entitled "Toward a Model of Distributed Engineering Collaboration." From 1997-1999, he was an Assistant Professor in the School of Industrial Engineering at the University of Oklahoma.

Dr. Harvey's professional experience includes seven years active duty in the United States Air Force (USAF) as a facility engineer. He also served as a software development engineer for the Air Force's facility engineering information systems. Today, Dr. Harvey still serves in the USAF Reserves (Major, USAFR) and is responsible for the design evaluation of supporting information technologies and business process improvement for facility engineers. Upon leaving USAF active duty, Dr. Harvey was responsible for reengineering at the Student Loan Marketing Association (SallieMae) and later was a consultant with KnowledgeWare.

Dr. Harvey's primary research area is on collaboration and advanced systems for humans. This research focuses on the human aspects of collaboration in the accomplishment of complex tasks. Previous work has looked at distributed communication media (e.g., video and voice conferencing) and computer sharing tools in the support of collaborative engineering. In addition he is interested in the human aspects of maintenance engineering.

Professor Travels To WSU For International Collaboration

Dr. Haider Ali Ramadhan is a visiting professor in the Department of Computer Science and Engineering. Dr. Ramadhan is from Sultan Qaboos University, Oman, a nation in the Arabian Peninsula. He is spending his sabbatical at Wright State and will be with us until August 2000.

Dr. Ramadhan received his B.S. and M.S. degrees in computer science from the University of North Carolina and his Ph.D. in computer science & AI from the University of Sussex, United Kingdon. His research interests include intelligent programming systems, knowledge representation, software visualization and program animation, HCI, intelligent user interfaces, development of software environments, and alternate programming paradigms such as natural programming and programming by discovery.

Dr. Ramadhan is actively involved in collaborative research projects with the AI group at the University of Sussex, the HCI group at CMU, the AI group at NJIT, and the visualization group at Oregan State University. The product of this collaborative research effort has appeared in numerous journal and conference papers. Dr. Ramadhan chaired several technical sessions at international conferences and he will be the General Chairman of the ACM International Conference (already being announced in the ACM publications) on Computer Arabization and Pattern Recognition to be held in Oman in March 2001.

Dr. Ramadhan was the Director of the Sultan Qaboos University Computer Center for four years and is currently the Chair of the Department of Computer Science at the College of Science. In addition to being a member of the editorial board of the Journal of Science and Technology, he was a member of the Program Committee for the International Conference on Artificial Intelligence (IC-AI'99), (Las Vegas, July, 1999), and received the prize for the outstanding paper at the ACM COMPSAC'92.

Welcome, Dr. Harvey & Dr. Ramadhan!

SCHOLARSHIPS & FELLOWSHIPS

The National Science Foundation (NSF) 2000 Graduate Research Fellowship Program will award approximately 900 new Graduate Research Fellowships to support graduate study in science, mathematics, and engineering. These awards will be for the 2000/20001 academic year.

Fellowships are awarded for graduate study leading to research-based master's or doctoral degrees in the fields of science, mathematics, and engineering supported by the NSF. Applicants must be citizens, nationals, or permanent resident aliens of the U.S. at the time of application. Applicants must be at or near the beginning of their graduate study.

Each three-year fellowship provides a stipend of $15,000 for 12-month tenure and a cost-of-education allowance of $10,500 per tenure year. Graduate Research Fellowships are awarded on the basis of merit. Disciplinary panels of scientists, mathematicians, and engineers will review each applicant's qualifications.

Application deadline is November 4, 1999. Further information and applications are available in the Dean's Office, 405 Russ Engineering Center, or at:

NSF Graduate Research Fellowship Program
Oak Ridge Associated Universities
P.O. Box 3010
Oak Ridge, TN 37831-3010
Voice: (423) 241-4300
FAX: (423) 241-4513
E-Mail: nsfgrfp@orau.gov
Internet: www.orau.org/nsf/nsffel.htm

The American Public Power Association's Demonstration of Energy-Efficient Developments (DEED) program is seeking qualified applications. The DEED program was established in 1980 as a research, development, and demonstration program to sponsor and conduct activities related to energy innovation, improving efficiencies, and lowering the cost of providing energy services to the customers of publicly owned utilities.

The DEED program offers funding for projects that will develop and demonstrate new technologies and techniques. DEED scholarships are intended to promote the involvement of students studying in energy-related disciplines in the public power industry and to provide host utilities with technical assistance.

Successful applicants are expected to conduct research on a project approved by the sponsoring utility and submit a final report on the project, describing activities, cost, bibliography, achievements, problems, results, and recommendations. A two-page summary abstract is also required.

Only students studying in energy-related disciplines from accredited colleges or universities are eligible for scholarships. Applicants will not be discriminated against on the basis of sex, race, religion, national origin, or citizenship. Applicants must be sponsored by a utility. Scholarships may be split among collaborating students.

Applications will be evaluated based on the following criteria:

- broad application of benefits to public power systems;
- close involvement of host utility in monitoring, sponsoring, and guiding the project;
- major in academic field related to electric power or energy service industries;
- superior academic record;
- generalized methodologies; and
- promotion of energy efficiency.

Application deadline is December 17, 1999. Additional information and application packets are available in the Dean's Office, 405 Russ Engineering Center.

✔ It Out...

College of Engineering and Computer Scinece Newsgroups:

wright.ecs.announce.events
for club meetings and other upcoming events;

wright.ecs.announce.for-sale
for posting items you would like to sell or are interested in purchasing;

wright.ecs.announce.housing
for posting housing availability and requests for roommates;

wright.ecs.announce.jobs
for help wanted and other employment opportunities;

and

wright.ecs.announce.misc
for posting anything else.

SWE Seeks Nominations To Recognize Outstanding Individuals

The Society of Women Engineers is seeking nominations for seven prestigious awards. Award recipients will be recognized at the Society of Women Engineers annual national conference in Washington, DC, on June 27-July 1, 2000. They will also be featured in SWE Magazine, a national publication, as well as press releases to various related publications.

Please identify and nominate candidates from your school, business, professional societies, and technical field for the following awards:

Achievement Award—for contribution to the field of engineering over a significant time period.

Upward Mobility Award—for contribution in engineering or technical management.

Resnik Challenger Medal (in memory of Dr. Judith A. Resnik, NASA Astronaut)—for engineering contributions which broaden the frontiers of space exploration.

Rodney D. Chipp Memorial Award—to recognize a man or company that has contributed significantly to the acceptance and advancement of women in the engineering field.

Distinguished Engineering Educator Award—for a SWE member who has demonstrated excellence in teaching.

Distinguished New Engineer Award—for SWE members with less than 10 years experience who are actively engaged in engineering and have demonstrated outstanding technical performance.

Fellow Grade—for SWE members who have advanced the public's awareness of engineering as a profession for women.

Nomination deadline is December 15, 1999. Nominations and more information are available in the Dean's Office, 405 Russ, or through the SWE Headquarters, by telephone at (212) 509-9577 or by E-mail at hq@swe.org.

Student Government Report

Welcome back College of Engineering and Computer Science faculty, staff, and students for the 1999-2000 school year. I hope everyone will have a successful and enjoyable year.

Student Government (SG), under the leadership of Liz Conzo and Eric Schweser, have proposed several major issues they would like to initiate and/or accomplish this year for the betterment of Wright State University's student body. The first set of goals involves student satisfaction. "Operation: Hi, How Are You?" would involve random students evaluating WSU employees who service the students in departments such as the Bursars Office and Financial Aid office. SG will also work with Faculty Senate to devise a plan for publication of faculty evaluations, possibly on the SG web page.

Other SG issues for 99/00 include the Timeline Program, Field Day, Brown Bag Lunches, and Athletic Attendance Plan. For the timeline program, SG aims to keep current students informed and updated on changes and construction by compiling and publicizing timelines that illustrate the changes. SG is also coordinating a small field day of 2-5 events in which students, faculty, and staff compete.

Another new program is Brown Bag Lunches. This program, which will hopefully begin Winter 2000, would invite randomly selected to students to meet on campus with student leaders, faculty, and administrators. A forum such as this is an excellent method to discover issues/problems early and communicate effectively with students. In the Athletic Attendance Action Plan, SG will be working with the Student Athletic Council to encourage/coordinate events such as spirit contests and athletic dialogues to help increase athletic turnout.

Now that you know SG plans for this year, I'd like to introduce myself. My name is Beth and I am a second year biomedical engineering major. Last year I participated in Society of Women Engineers, Wright Engineering Council, and Wright Outdoors Etc. This year I will be your student government representative. But what does that mean?

It means I was elected to represent YOU. I will be representing the voice of the CECS student body to the university as a whole, but I can't do it with out your help. I need to hear your questions, comments, or concerns regarding Wright State University and the CECS.

Feel free to stop me on campus, E-mail me at wirick.2@wright.edu, or check the student government (SG) information board outside 163 Russ.

Beth Wirick

CECS Student Government Representative

Student Research Program

SOCHE

- **Research opportunities at WPAFB Materials Lab**
- **Flexible work schedules—We will work with you!**
- **Career related work experience!**
- **Earn & learn ($10.00 - $15.30/hr)**
- **Undergraduate to graduate students**
- **Degree seeking students in good standing**
- **Must be a U.S. Citizen**

AVAILABLE NOW:

Project #170A—Synthesis and Characterization of New Organic Compounds and Polymers for Air Force Applications (Chemistry). Description: Perform/monitor organic reactions following established procedures for the synthesis of monomers and polymers, and conduct characterization of the isolated organic compounds and polymers using standard organic analytical techniques.

Project #TBA—Microstructure Evoluation During Solid Freeform Fabrication (Materials Science, Mechanical Engineering, Chemical Engineering). Description: Analyze samples of Ti-6AI-4V fabricated by a solid freeform fabrication (direct-laser deposition) technique using standard metallographic techniques. Evaluate microstructures using optical and scanning electron microscopy to determine grain size, shape, platelet thickness, etc. These features will be correlated to process variables such as laser power, powder feed rate, and deposition rate.

Project #201—Degradation Studies of Conductive Elastomers (Chemical Engineering, Materials Science, Physics). Description: Hands-on, in-house research and development in electrically conductive elastomer materials performance degradation phenomenon and new materials development. Work may include thermal analysis (DTA, DSC, DMA), chemical analysis (FTIR, Raman, etc.), surface chemical analysis (XPS), analysis of the effects of various environmental exposure effects (humidity, aircraft fluids), curing studies, development of methodologies for conductivity testing, and a variety of mechanical properties studies to elucidate performance and failure mechanisms.

Project #209—Degradation Studies of Conductive Elastomers (Physics, Chemistry, Chemical Engineering, and Materials Science). Description: Hands-on, in-house research and development in conductive elastomer materials performance degradation phenomenon and new materials development. May include thermal analysis (DTA, DSC, DMA), chemical analysis (FTIR, Raman, etc.), surface chemical analysis (XPS), analysis of the effects of various environmental exposure effects (humidity, aircraft fluids), curing studies, development of novel methodologies for conductivity testing, and a variety of mechanical properties studies.

Project #214—Non-Destructive Analytical Analysis of Advanced Coating Systems (Chemistry, Chemical Engineering, Physics, and Materials Science). Description: Hands-on, in-house research of aircraft coating and corrosion related phenomenon. Includes chemical analysis (photo-acoustic spectroscopy, FT-IR, Raman, optical microscopy, etc.), chemical analysis of coating materials, analysis of the effects of various treatments on aluminum alloys, analysis of primer and top-coat systems, and a variety of surface analytical studies directed at characterizing surfaces and surface interfaces. These surface studies include chemical analysis of alloy surfaces, newly formulated primers and topcoats, analysis of synthetic precursors, and investigation of corrosion inhibitor incorporated into various coating systems.

AVAILABLE IN DECEMBER:

Project #163A—Structure and Properties of Biomolecules (Chemistry). Description: Develop, improve, and apply computer programs to be used for the design of novel biomaterials. The student is required to have computer skills, for example, knowledge of UNIX, as well as analytical thinking capabilities.

Project #169A—Structural Failure Analysis Testing (Mechanical Engineering). Description: Prepare samples for metallurgical exams, including: cutting and mounting, polishing and etching, and examination and photographing using optical microscopes and cameras. Some chemistry, physics and college math desirable. Some lifting of heavy objects (40-50 lbs.) required. Experience with hand tools is highly desirable (drills, grinders, wrenches, saws, etc.). Good verbal and written communication skills and the ability to work on several project simultaneously required.

For more information, call (937) 910-5808 or visit www.soche.org. To apply, submit SOCHE application, resume, and transcript to:

SOCHE
3155 Research Blvd., Suite 204
Dayton, OH 45420-4015
FAX: (937) 910-5801

Need help in math?? Come see us!

NEW MATH HELP ROOM

for Engineering and Computer Science Students

For help in MTH 131 or MTH 229.

Location: Study Lounge, Russ Engineering Center

Hours Available:

Monday–Thursday:	1:00 to 7:00 P.M.
Friday:	1:00 to 4:00 P.M.
Saturday:	9:00 to 11:00 A.M.
	and
	Noon to 1:00 P.M.
Sunday:	4:00 to 7:00 P.M.

Congratulations Welcome Week Winners

Student Winners:

Kevin Baum—WSU T-Shirt
Corey Westrick—WSU Pen
Rapharaw—Welcome Week T-Shirt
Jenny Garringer—College Mug
Angel Whitmer—College Lunchbag
Michael Myers—College Penlight
Brian Jones—College Bag
Erin Bernard—Wolf Key Ring

Yo-Yo Winners:

Trickiest Yo-Yoer
Steve Short—WSU T-Shirt

Most Consecutive Yo-Yos
Aaron Kurtz—Welcome Week T-Shirt

Faculty/Staff Winners:

Les Woodcock—WSU T-Shirt
Richard Bethke—WSU Pen
Dick Rathbun—Welcome Week T-Shirt
Craig Harvey—College Mug
Karen Tomko—College Lunchbag
Maher Amer—College Penlight
Sue Grieshop—College Bag
Jay Davenport—Wolf Key Ring

Important Dates To Remember . . .

October 6	—	Last day to drop a class without a grade
October 8	—	Engineering Leadership Seminar, Tait Conference Room, 405 Russ
October 15	—	Winter Quarter class schedules due out
October 19	—	Last day for all but freshmen to drop a class with a grade of "W"
October 20	—	CECS Student Club Fair, 11:00 A.M. to 1:00 P.M., Russ Center Lobby
October 22	—	Engineering Leadership Seminar, Tait Conference Room, 405 Russ
October 23	—	Senior registration begins for Winter Quarter 2000
October 24	—	Graduate/unclassified registration begins for Winter Quarter 2000
October 30	—	Junior registration begins for Winter Quarter 2000
November 1	—	Faculty Senate, 2:30 P.M.
November 6	—	Sophomore registration begins for Winter Quarter 2000
November 9	—	General Faculty Meeting, 3:30 P.M.
November 11	—	Veterans Day—University Closed
November 12	—	Last day for freshmen to drop a class with a grade of "W"
November 13	—	Freshman registration begins for Winter Quarter 2000
November 19	—	Engineering Leadership Seminar, Tait Conference Room, 405 Russ
November 23	—	Last day of Fall Quarter classes

WRIGHT STATE
UNIVERSITY
College of Engineering and Computer Science
3640 Colonel Glenn Hwy.
Dayton, Ohio 45435-0001

Office of the Dean